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EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,967

Applicant(s)

REIME ET AL.

Examiner

Thanh X Luu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 15 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-14, 16-22 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This Office Action is in response to amendments and remarks filed April 29, 2003. Claims 1-26 are currently pending.

Claim Objections

1. Claim 1 is objected to because of the following informalities:

In claim 1, line 4, "one ore more" is improper.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Fitzgibbon (U.S. Patent 4,710,759).

Regarding claims 24-26, Fitzgibbon discloses (see Figure 1) a system for sensing and detecting the presence of an object at a touch pad device, wherein the touch pad device has a designated interaction area (10) for allowing a user to use the object to interact with the touch pad device, comprising: at least one group of optical sensor components including a first light emitter (LEDs; one element of 12 or 14), a second light emitter (another element of 12 or 14) and a light receiver (20 or 22) in the touch pad device at different locations thereof such that the receiver is capable of receiving a first amount of light emitted by the first light emitter and a second amount of

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light emitted by the second light emitter, wherein the first amount of light and the second amount of light are caused to change when the object is present at the touch pad device, means, operatively connected to the light receiver, for separately measuring (24, 26, 40, 30) the change in the first amount of light and the change in the second amount of light for providing a first signal and a second signal indicative of the respective changes; and means, responsive to the first and second signal, for determining (30) the location of the object in the designated interaction area in relation to the first light emitter and the second light emitter based on the first and second signals. Fitzgibbon also discloses (see Figure 1) a timing control module (32, 34, 36) for disabling the first light emitter when the change in the second light amount is measured and disabling the second light emitter when the change in the first light amount is measured. Fitzgibbon further discloses (see column 3, lines 40-45) pulsing the light emitters (firing on and off) at a predetermined frequency (see column 2, lines 45-50) that changes the first amount of light and the second amount of light to contain a frequency component of the predetermined frequency.

4. Claims 1-3, 5 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuth et al. (U.S. Patent 5,726,685).

Regarding claims 1-3, 5 and 17, Kuth et al. disclose (see Figure 1) a device and method of sensing and detecting the presence of an object (2) at a touch pad device having one or more input functions, wherein the touch pad device has a designated interaction area (any area in Figure 2) for allowing a user to use the object to interact with the touch pad input for facilitating the one or more input functions, comprising the

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steps of: providing at least one group of optical sensor components including a first light emitter (3), a second light emitter (second instance of 3) and a light receiver (camera) in the touch pad device at different locations thereof such that the receiver is capable of receiving via reflection a first amount of light emitted by the first light emitter and a second amount of light emitted by the second light emitter; wherein when the object is present at the touch pad device, causing a change in the first amount of light and the second amount of light, measuring (5) separately the change in the first amount of light and the change in the second amount of light for providing a first signal and a second signal indicative of the respective changes; and determining the location (5, 7, 8) of the object in the designated interaction area in relation to the first light emitter and the second light emitter based on the first and second signals. Kuth et al. further disclose (see Figure 1) the designated area (1) has an upper (above 1) and a lower side (below 1), and the group of optical sensor components is placed on either the upper or lower side. The measuring and determining steps are inherently repeated since movement of the object is detected across the designated area.

5. Claims 1-9, 11-14, 16-18, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Weissmueller et al. (U.S. Patent 4,459,476).

Regarding claims 1-9, 11-14, 16-18, 21 and 22, Weissmueller et al. disclose (see Figure 2) a device and method of sensing and detecting the presence of an object at a touch pad device having one or more input functions, wherein the touch pad device has a designated interaction area (screen) for allowing a user to use the object to interact with the touch pad input for facilitating the one or more input functions, comprising the

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steps of: providing at least one group of optical sensor components including a first light emitter (A), a second light emitter (B) and a light receiver (56) in the touch pad device at different locations thereof such that the receiver is capable of receiving via reflection (at 42) a first amount of light emitted by the first light emitter and a second amount of light emitted by the second light emitter; wherein when the object is present at the touch pad device, causing a change in the first amount of light and the second amount of light, measuring separately the change in the first amount of light and the change in the second amount of light for providing a first signal and a second signal indicative of the respective changes; and determining the location (78) of the object in the designated interaction area in relation to the first light emitter and the second light emitter based on the first and second signals. Weissmueller et al. further disclose (see Figure 2) the designated area has an upper, lower, left or right side, and the group of optical sensor components is placed on either the upper, lower, left or right side. The measuring and determining steps are inherently repeated since movement of the object is detected across the designated area. Weissmueller et al. also disclose (see Figure 2) the touch pad device has a peripheral area (overscan area) surrounding the designated interaction area and the group of optical sensor components are placed within the peripheral area. Further, Weissmueller et al. disclose (see Figure 2) a third light emitter (P), a fourth light emitter (O) and a further light receiver (61) at different locations as claimed, and measuring separately and determining the location of the object based on third and fourth signals as claimed. Weissmueller et al. also disclose (see column 4, lines 1-5) the light emitters are pulsed at a predetermined frequency and the changes in

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the light amounts contain a frequency component of the predetermined frequency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuth et al. in view of Fitzgibbon.

Regarding claim 19, Kuth et al. disclose the claimed invention as set forth above. Kuth et al. do not specifically disclose the type of light emitters. Fitzgibbon teaches (see column 2, line 30) using LEDs. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide LEDs in the apparatus of Kuth et al. in view of Fitzgibbon to provide a more efficient and compact device.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuth et al.

Regarding claim 20, Kuth et al. disclose the claimed invention as set forth above. Kuth et al. do not specifically disclose using infrared radiation. However, it is notoriously well known in the art to use infrared radiation in touch pad devices in order to reduce interference with visible radiation. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide infrared radiation in the apparatus of Kuth et al. to reduce interference and improve detection.

Allowable Subject Matter

9. Claims 10, 15 and 23 are allowed over the prior art of record.

The following is a statement of reasons for the indication of allowable subject matter: A method and device of sensing and detecting the presence of an object at a touch pad as claimed, more specifically in combination with: controlling the third amount of light to be substantially equal to the sum of the first and second amount when the object is not present; or providing compensation light emitters such that the compensation amount is equal to the sum of the other light amounts; or disposing the components at corners, operating the emitters at a bi-wavelength and providing third and fourth light receivers is not disclose or made obvious by the prior art of record.

Response to Arguments

10. Applicant's arguments with respect to claims 1-9, 11-14 and 16-22 have been considered but are moot in view of the new ground(s) of rejection.

Examiner further notes that the claims simply state that the receiver receives light via reflection, not the receiver receiving light via reflection by the object as Applicant asserts.

Regarding claims 24-26, Applicant asserts that Fitzgibbon does not disclose receiving light via reflection. However, such language is not found in claims 24-26. Thus, Applicant's assertions are not persuasive and the claims remain anticipated by Fitzgibbon.

Therefore, as set forth above, this rejection is proper.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
June 4, 2003



Thanh X. Luu
Patent Examiner